

**REMARKS**

The Office Action mailed on April 08, 2004, has been reviewed and the comments of the Patent and Trademark Office have been considered. Prior to this paper, claims 1 - 3 were pending in the present application. By this paper, Applicants do not add or cancel any claims. Therefore, claims 1-3 are now pending in the present application.

Applicants respectfully submit that the present application is in condition for allowance for the reasons that follow.

**Claim Rejections Under 35 U.S.C. §103(a)**

In the Office Action, all of the claims are rejected under 35 U.S.C. §103(a) as being unpatentable over Moore (U.S. Patent No. 5,637,321) in view of Lin (U.S. Patent No. 5,384,149). Applicants respectfully traverse the rejection as to the claims above, and submit that these claims are allowable for at least the following reasons.

Applicants rely on MPEP § 2143, which states that:

[t]o establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

It is respectfully submitted that at least the first and third criteria of MPEP § 2143 have not been met in the Office Action.

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Applicants have carefully considered the comments contained in the Office Action, with special attention paid to the section entitled “Arguments are not Persuasive.” In view of the comments contained in this section, Applicants believe that it is useful to identify the general distinctions between the present invention and the prior art before discussing the deficiencies of the cited references.

Claim 1 covers a method of extracting cartilage from poultry skeletons. That is, in a sense, claim 1 is directed to refining poultry cartilage from raw poultry skeletons, and thus there is an analogy to be drawn to refining gasoline from crude (raw) oil.

In contrast, Moore is almost entirely directed towards utilizing poultry cartilage to treat arthritis. In this regard, Moore is analogous to utilizing gasoline, *already* refined from crude oil, in an automobile engine. True, Moore does mention that cartilage is diced to a certain size and sterilized, but Applicants submit that this is at most analogous to specifying an octane level for the gasoline to be used in the automobile, and more likely an attempt by Moore to convey to the reader that the cartilage should be as pure as possible. The statement in Moore that “the Type II collagen containing tissue [(i.e., the cartilage)] is first dissected free of surrounding tissue” at col. 3, lines 52-53 is the only non-exemplary instance where Moore talks about “unrefined” poultry cartilage. Everything in Moore after this single statement, including dicing the cartilage, is related to working with cartilage **after** the cartilage has been separated from an avian skeleton (i.e., refined). In sum, Moore teaches the use of poultry cartilage, albeit with a reference to the quality of the cartilage<sup>1</sup>, while the invention of claim 1 covers **obtaining** cartilage. Just as a reference that teaches the use of gasoline, even of a specified octane, without more, does not render a claim covering the detailed refinement of crude oil obvious, Moore does not render the invention of claim 1 obvious.

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<sup>1</sup> The very fact that Moore felt that he must convey to the skilled artisan the quality of the cartilage used in his processes (*i.e.*, that it should be free from surrounding tissue) denotes the relative lack of progress in this art. No doubt the early auto manufacturers cautioned against utilizing crude oil or poorly refined oil in their vehicles due to the fact that the state of the oil refining arts in those days was low. The relative lack of advancement in this art is evidence that the invention of claim 1 is, in fact, non-obvious.

The Cited References Do Not Suggest All Claim Recitations

Even if the first requirement of MPEP § 2143 was satisfied in the Office Action (which it is not, as explained below), the cited references still do not meet the third requirement, which is that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.”

Claim 1 recites (a) **grinding** poultry skeletons, and then (b) separating and extracting cartilage from said **ground poultry skeletons**. That is, **first**, poultry skeletons are ground, **then** cartilage is extracted. This is because step (b) must necessarily follow step (a), because cartilage cannot be extracted from **ground** poultry skeletons until poultry skeletons are ground, else the portion of recitation (b) regarding the extraction of the cartilage from the **ground** poultry skeleton would be vitiated. The Office Action states that the “limitations argued with (i.e., grinding the entire skeleton first before dicing or comminuting the extracted cartilage) are not recited in the rejected claim(s).” (Office Action, page 5, middle thereof.) Applicants respectfully assert that this is not Applicant’s argument. Applicants argue that poultry skeletons are first ground **before cartilage is extracted**, irrespective of what happens to the cartilage **after extraction** (whether or not it is diced or comminuted).

Neither Moore nor Lin teach the above elements. As discussed above, Moore teaches the **use** of poultry cartilage, and does not teach the claimed method of obtaining the cartilage. In fact, Moore teaches the opposite: cartilage is ground **after** it is extracted from a skeleton, **not before**. Moore states that “in preparing the poultry or warm-blooded animal tissue for oral administration, the Type-II collagen containing tissue is **first** dissected free of surrounding tissue and diced.” (Moore, col. 3, lines 52-53, emphasis added.) The “poultry or warm-blooded animal tissue” / “Type-II collagen containing tissue” is poultry cartilage, as is evinced at column 2, lines 45-49. It is not a poultry skeleton. Thus, Moore teaches at most **dissecting** cartilage (the Type-II collagen containing tissue) from “surrounding tissue,” as opposed to grinding cartilage combined with “surrounding tissue” and then extracting cartilage from the ground cartilage/surrounding tissue. By teaching that the cartilage is dissected/removed from “surrounding tissue” **before** being diced, Moore teaches away from the present invention.

Lin, which is only introduced in the Office Action to remedy the recognized deficiency of Moore regarding the use of edible liquid circulating in a vessel, does not remedy this further deficiency of Moore. Claim 1 is allowable for at least this

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Claim 1 also recites the recitation that cartilage is “separated and extracted” from ground poultry skeletons “by a flow of edible liquid circulating in a separating vessel.” That is, a flow of edible liquid circulating in a separating vessel is used to separate and extract cartilage from the ground poultry skeletons.

The Office Action correctly recognizes that the blending of Moore does not result in removal of cartilage from the skeleton of poultry, as the cartilage is already removed. Thus, Moore does not teach separating cartilage as claimed.

Moore is relied on to teach a “blending process which includes mixing and/or blending of cartilages by using a blender,” which allegedly provides “a clear indication that the extracted cartilage is processed in a separating vessel having an ascending vertical component,” with col. 3 and Example 1 of Moore being identified as teaching the just quoted subject matter. Applicants again respectfully submit that col. 3 and Example 1 contain no such teaching, nor does col. 3 and Example 1 provide such an indication. Applicants respectfully request that in any next paper from the PTO, other than a notice of allowance, the PTO specifically identify where in col. 3 and Example 1 such a teaching may be found.

Lin also does not teach separating cartilage as claimed. In Lin, a brine is used to dissolve salt soluble proteins. This is not separating cartilage from an avian skeleton. Assuming *arguendo* that cartilage is soluble in a brine, all that would be left of the cartilage would be proteins dissolved in the brine, along with other proteins from non-cartilage components. Thus, Lin does not teach “separating and extracting” cartilage from ground poultry skeletons.

Moreover, in the present invention, the flow of edible liquid circulating in a separating works to physically separate the cartilage from the avian skeleton due to fluid dynamic forces. That is, it does not rely on dissolving processes during the separation and extraction steps. In this regard, *Lin teaches away from the present invention*, because Lin relies on dissolving proteins.

Still further, it appears that the Office Action relies on common knowledge in the art, as is discussed and permitted in MPEP § 2144.03, to satisfy the first requirement of MPEP § 2143. However, Applicants note that § 2144.03 allows an applicant “to traverse such an assertion,” and that when an applicant does so, “the examiner should cite a reference in support of his or her position.” (MPEP § 2144.03, second paragraph.) Applicants hereby traverse the assertion that the teachings of Lin result in the separation of cartilage from an avian skeleton. **Applicants thus request, pursuant to MPEP § 2144.03, second paragraph, that the PTO cite a reference in support of the position taken in the Office Action, else allow the claims.**

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In sum, even if the first requirement of MPEP § 2143 is satisfied, the third requirement of MPEP § 2143 is not satisfied in the Office Action, since the cited references do not teach each and every element of the present invention. Thus, the present claims are allowable.

**Lack of Suggestion or Motivation to Modify or Combine the References**

MPEP § 2143.01 details the requirements on the PTO for establishing motivation to modify or combine references to reject a claim as obvious. One requirement, as detailed in MPEP § 2143.01, subsection 6, is that “the proposed modification cannot change the principle of operation of a reference – If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810 (CCPA 1959).” In *Ratti*, the CCPA held that the “suggested combination of references would require a substantial reconstruction and redesign

of the elements shown in the primary reference.” This substantial redesign would have resulted in changing a rigid seal to a resilient seal. Thus, a reference cannot be modified to render an invention obvious if the modification changes the principle of operation of the reference, **even if that modification is workable or easily implemented.**

With the above in mind, it is respectfully submitted that since Moore teaches that cartilage is **cut** from the surrounding tissue, substituting cartilage **dissolution** in a brine solution (or even the force/shock effects of flowing brine on cartilage to remove the cartilage) would change the principle of operation of Moore. Since modifying Moore to utilize brine dissolution changes the principle of operation of Moore just as changing the rigid seal to a resilient seal changed the principle of operation in *Ratti*, “the teachings of [Moore] are not sufficient to render the claims *prima facie* obvious.”

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The Office Action does not properly identify where the prior art suggests the desirability of the claimed invention. MPEP § 2143.01, entitled *Suggestion or Motivation to Modify the References*, states that the “prior art *must* suggest the desirability of the claimed invention.” (emphasis added; citations omitted) It further states that obviousness

can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art. ‘The test for an implicit showing is what the combined teachings, knowledge of one of ordinary skill in the art, and the nature of the problem to be solved as a whole would have suggested to those of ordinary skill in the art.’

(Citations omitted.)

The Office Action alleges that “one of ordinary skill in the art would have been motivated to adapted . . . Lin . . . into the method of Moore’s . . . to obtain the *known and recognized functions and advantages* of using water for separating liquid or salt solution thereof.” (Office Action, page 4, middle thereof, emphasis added.) Applicants first respectfully submit that the Office Action has not proffered any “known and recognized

functions and advantages of using water for separating liquid or salt solution thereof.” That is, other than broadly alleging that known advantages would flow from utilizing water, the Office Action is silent in regard to such advantages.

Furthermore, the proffered mode of combination does not comport with obviousness, and is more likely founded on impermissible hindsight. The Office Action asserts that because Moore teaches blending of cartilage *after it has been separated*, it would have been obvious to introduce brine into a blender *to separate cartilage*. If Moore teaches that cartilage is already separated *prior* to introduction into a blender, why would the skilled artisan, who is by definition **not an innovator**, know to use the proffered blender-brine combination to separate cartilage? Assuming *arguendo* that such a modification results in the present invention, such a modification would be an innovative step, not an obvious step, for it would require the skilled artisan to ignore teachings of Moore and to add complexity to Moore.

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In summary, because of the lack of suggestion or motivation in the prior art to modify the reference, the first requirement of MPEP § 2143 has not been met and, hence, a *prima facie* case of obviousness has not been established.

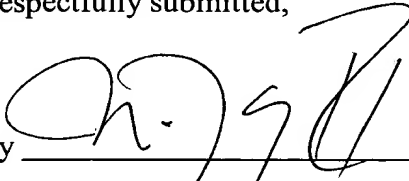
### **Conclusion**

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Examiner Mohamed is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

Respectfully submitted,

By \_\_\_\_\_

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